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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,471	07/23/2003	Laura Hadden	71493-1165 /aba	7439

7380 7590 08/23/2006

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EXAMINER	
AZEMAR, GUERSSY	
ART UNIT	**PAPER NUMBER**
2631	

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/624,471	Applicant(s) HADDEN ET AL.	
	Examiner Guerssy Azemar	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 – 4, 20, 21, 24 - 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien (20020176482) in view of Ohira et al. (20020131101).

(1) with respect to claim 1:

Chien discloses a method of determining the viability of a signal path through the network, comprising the steps of:

identifying at least one optical effect that impacts the viability signal path (SNR, SIR , BER in table 1, page 3);

identifying at least one base variable upon which the identified optical effects depend (page 4, paragraph 0072, "noise process, and amplitude ....").

approximating each identified optical effect as a function of each identified base variable (equation for SNR and SIR in paragraph 0080);

assigning a performance value to the signal at its introduction into the network (v1 - v18 in table 1, page 3);

recalculating the impact of each identified optical effect on the performance value as the signal passes through the segment (64 in figure 2, 'the estimate loops back", and

the reference further teaches in page 4, paragraph 0058 that the estimates are based on current conditions); and

comparing the resulting performance of the signal after passage along the signal path against an acceptable threshold to determine the path's viability (see the different rows in table 1, page 3).

However Chien does not disclose a network comprising a plurality of nodes interconnected by optical fiber segments and recalculating for each successive segment in the signal path.

Ohira et al. discloses a network comprising a plurality of nodes interconnected by optical fiber segments and recalculating for each successive segment in the signal path (100a-f in figure 1, Setting S1 - S4 in figure 3).

Although Chien provides the same method of monitoring and maintaining a network, it does not disclose a way of doing so in an optical fiber network. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the viability of signal as taught by Chien in the optical fiber network taught by Ohira et al. because it would have been easier to operate and would provide flexibility in the maintenance environment (page 1, paragraph 0005).

(2) with respect to claim 2:

Chien discloses the method, wherein the step of recalculating comprises the steps of:

calculating the value of each identified base variable (see equation of SNR in paragraph 0080);

calculating the impact of each identified optical effect in the segment based on the calculated value of each identified base variable (different rows of table 1, where the values between v3 – v6 are operational values for BER); and

calculating the resulting performance from effect (step 50 in figure 2).

However, Chien does not disclose calculating performance while passing through segment.

Ohira et al. teaches calculating performance while passing through segment (Monitoring zone in figure 3, S1 - S4 in figure 4).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to monitor the viability of the signal while passing through the segment as taught by Ohira et al. because, in doing so, the maintenance of the network would be more reliable.

(3) with respect to claim 3:

Chien teaches the method further comprising the step of:

calculating the resulting performance of the signal resulting from the optical effects (step 50 in figure 2).

However, Chien does not teach the method further comprising the node at which the segment terminates.

Ohira et al. teaches the method further comprising the node at which the segment terminates (100a-f in figure 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to calculate the resulting performance as taught by Chien at the node at

which the segment terminates, taught by Ohira et al., because, it is clear that in running the test less frequently, less memory would have been necessary to store the results, which of course would result in more economy in network maintenance.

(4) with respect to claim 4:

Chien teaches the method further comprising the steps of:

measuring the current performance of the signal (step 50 in figure 2, After the process loops back); and

re-calculating the resulting performance of the signal using a measure of the current performance (page 2, paragraph 0058, "based on current estimates").

(5) with respect to claim 20:

Chien teaches the method, wherein the performance is measured by bit error rate (page 5, paragraph 0091).

(6) with respect to claim 21:

Chien teaches the method, wherein the performance is measured by optical signal-to-noise ratio (page 5, paragraph 0079).

(7) with respect to claim 24:

Chien teaches a quantifier to determine the value of at least one identified base variable upon which optical effects that impact the viability of the signal path are dependent (22 in figure 1, channel monitor, the examiner believes that the channel monitor performs the above mentioned limitations as mentioned in page 4, paragraph 0072);

an approximation to determine the value of at least one identified optical effect that impacts the viability of the signal path (22 in figure 1, channel monitor, the examiner believes that the channel monitor performs the above mentioned limitations as mentioned in table 1, page 3);

a calculator to determine the impact of each identified optical effect on the performance of a signal passing through a segment in the signal path (22 in figure 1, channel monitor, the examiner believes that the channel monitor performs the above mentioned limitation. It performs the step 50 in figure 2); and

a comparator to determine if the resulting performance of the signal at the end of he signal pas satisfies an acceptable threshold (22 in figure 1, channel monitor, performs the operations of table 1).

However, Chien does not teach a communications network comprising a plurality of nodes interconnected by segments of optical fiber.

Ohira et al. teaches a communications network comprising a plurality of nodes interconnected by segments of optical fiber (100a –f in figure 1)

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate these components as taught by Chien in the network of Ohira et al. because the network would be more flexible.

(8) with respect to claim 25:

Chien teaches all of the subject matter as described above, except for the apparatus wherein the node is an OAM node associated with the network.

However, Ohira et al. teaches the apparatus wherein the node is an OAM node associated with the network (page 1, paragraph 0005).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the OAM network as taught by Ohira et al. because it would provide a lot flexibility to the network.

(9) with respect to claim 26:

Chien teaches a quantifier to determine the value of at least one identified base variable upon which optical effects that impact the viability of the signal path are dependent for the at least one downstream segment (22 in figure 1, channel monitor, the examiner believes that the channel monitor performs the above mentioned limitations as mentioned in page 4, paragraph 0072);

an approximation to determine the value of at least one identified optical effect that impacts the viability of the signal path along the at least one downstream segment (22 in figure 1, channel monitor, the examiner believes that the channel monitor performs the above mentioned limitations as mentioned in table 1, page 3);

a calculator to determine the impact of each identified optical effect on the performance of a signal passing through the at least one downstream segment (22 in figure 1, channel monitor, the examiner believes that the channel monitor performs the above mentioned limitation. It performs the step 50 in figure 2); and

a communicator for communicating the resulting performance value along the at least one downstream segment to the corresponding downstream node (modem in figure 1).

However, Chien does not teach a communications network comprising a plurality of nodes interconnected by segments of optical fiber, a transmitter node, interconnected with at least one downstream node by a downstream segment along which it is adapted to send signals.

Ohira et al. teaches a communications network comprising a plurality of nodes interconnected by segments of optical fiber, a transmitter node, interconnected with at least one downstream node by a downstream segment along which it is adapted to send signals (optical transmission device in figure 4).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the transmitter node as taught by Ohira et al. because it would provide a lot flexibility to the network.

(11) with respect to claim 27:

Chien teaches all of the subject matter as described above, except for the apparatus wherein the performance value is communicated along an OSC channel in the segment.

Ohira et al. teaches for the apparatus wherein the performance value is communicated along an OSC channel in the segment (S1203 in figure 12, page 1, paragraph 18, optical transmission provider service network with OSC's).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the OSC channel as taught by Ohira et al. in the network of Chien, because in doing so, the network would be easier to operate.

(12) with respect to claim 28:

Chien teaches a quantifier to determine the value of at least one identified base variable upon which optical effects that impact the viability of the signal path are dependent on the at least one downstream segment (22 in figure 1, channel monitor, the examiner believes that the channel monitor performs the above mentioned limitations as mentioned in page 4, paragraph 0072);

an approximation to determine the value of at least one identified optical effect that impacts the viability of the signal path along the at least one downstream segment (22 in figure 1, channel monitor, the examiner believes that the channel monitor performs the above mentioned limitations as mentioned in table 1, page 3);

a calculator to determine the impact of each identified optical effect on the performance of a signal passing through the at least one downstream segment (22 in figure 1, channel monitor, the examiner believes that the channel monitor performs the above mentioned limitation. It performs the step 50 in figure 2); and

a communicator for communicating the resulting performance value along the at least one downstream segment to the corresponding downstream node (modem in figure 1).

However Chien does not teach a plurality of nodes interconnected by segments of optical fiber, an intermediate node interconnected with at least one upstream node by an upstream segment from along which it is adapted to receive signals and with at least one downstream node by a downstream segment along which it is adapted to send signals, comprising:

a receiver for receiving a previous performance value from the at least one upstream node along the segment interconnecting the two nodes;

Ohira et al. teaches a plurality of nodes interconnected by segments of optical fiber, an intermediate node interconnected with at least one upstream node by an upstream segment from along which it is adapted to receive signals and with at least one downstream node by a downstream segment along which it is adapted to send signals, comprising:

a receiver for receiving a previous performance value from the at least one upstream node along the segment interconnecting the two nodes (S901 in figure 9, see device 100, 10 and 200 in figure 12);

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the receiver and the upstream node as taught by Ohira et al. in the network of Chien, because in doing so, the network would be easier to operate.

(13) with respect to claim 29:

Chien teaches all of the subject matter as described above, except for the apparatus wherein the previous performance value is received from along an OSC channel in the upstream segment.

Ohira et al. teaches for the apparatus wherein the previous performance value is received from along an OSC channel in the upstream segment (S1203 in figure 12, page 1, paragraph 18, optical transmission provider service network with OSC's).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the OSC channel as taught by Ohira et al. in the network of Chien, because in doing so, the network would be easier to operate.

(14) with respect to claim 30:

Chien teaches all of the subject matter as described above, except for the apparatus wherein the resulting performance value is communicated along an OSC channel in the downstream segment.

Ohira et al. teaches the apparatus wherein the resulting performance value is communicated along an OSC channel in the downstream segment (S1202 in figure 12, page 1, paragraph 18, optical transmission provider service network with OSC's).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the OSC channel as taught by Ohira et al. in the network of Chien, because in doing so, the network would be easier to operate.

(15) with respect to claim 31:

Chien teaches a comparator for receiving a performance value (22 in figure 1, channel monitor, performs the operations of table 1).

However, Chien does not teach a plurality of nodes interconnected by segments of optical fiber, a receiver node interconnected with at least one upstream node by an upstream segment from along which it is adapted to receive signals, comprising:

A receiver for receiving a performance value from an upstream node along the segment interconnecting the two nodes.

Ohira et al. teaches a plurality of nodes interconnected by segments of optical fiber, a receiver node interconnected with at least one upstream node by an upstream segment from along which it is adapted to receive signals, comprising:

A receiver for receiving a performance value from an upstream node along the segment interconnecting the two nodes (S901 in figure 9, see device 100, 10 and 200 in figure 12);

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the receiver and the upstream node as taught by Ohira et al. in the network of Chien, because in doing so, the network would be easier to operate.

(16) with respect to claim 32:

Chien teaches the node further comprising a performance-measuring device for measuring the performance of received signals (channel monitor, 22 in figure 1).

However, Chien does not teach the receiver node.

Ohira et al. teaches the receiver node (device 10 in figure 12, S1001 in figure 10).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the receiver node as taught by Ohira et al. to replace the node of Chien because the network would be more flexible.

(17) with respect to claim 33:

Chien teaches all of the subject matter as described above, except for the apparatus wherein the performance value is received from along an OSC channel in the upstream segment.

Ohira et al. teaches for the apparatus wherein the performance value is received from along an OSC channel in the upstream segment (S1203 in figure 12, page 1, paragraph 18, optical transmission provider service network with OSC's).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the OSC channel as taught by Ohira et al. in the network of Chien, because in doing so, the network would be easier to operate.

(18) with respect to claim 34:

Chien in view of Ohira teach all of the subject matter as described in claim 24 above. Chien further teaches a computer readable medium for storing computer-executable instructions (page 1, paragraph 0011, the reference teaches a programmable processor programmed to compute preferred signal processing configuration).

(19) with respect to claim 35:

Chien in view of Ohira teach all of the subject matter as described in claim 26 above. Chien further teaches a computer readable medium for storing computer-executable instructions (page 1, paragraph 0011, the reference teaches a programmable processor programmed to compute preferred signal processing configuration).

(20) with respect to claim 36:

Chien in view of Ohira teach all of the subject matter as described in claim 28 above. Chien further teaches a computer readable medium for storing computer-executable instructions (page 1, paragraph 0011, the reference teaches a

programmable processor programmed to compute preferred signal processing configuration).

(21) with respect to claim 37:

Chien in view of Ohira teach all of the subject matter as described in claim 31 above. Chien further teaches a computer readable medium for storing computer-executable instructions (page 1, paragraph 0011, the reference teaches a programmable processor programmed to compute preferred signal processing configuration).

3. Claims 5 – 8, 19, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien (20020176482) and Ohira et al. (20020131101) as applied to claim 1 above, and further in view of Dennis et al. (20030031440).

(1) with respect to claim 5:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein an identified base variable is the fiber type.

However, Dennis et al. teaches the method, wherein an identified base variable is the fiber type (figure 8A, 8B).

Dennis et al. shows maps of different fiber types. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the maps taught by Dennis et al. as base variable in the calculations of Chien because it allows for better choice of fibers in the network, which subsequently become more reliable.

(2) with respect to claim 6:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein an identified base variable is the length of the segment.

However, Dennis et al. teaches the method, wherein an identified base variable is the length of the segment (see figure 8C, page 3, paragraph 0042).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the length of segment taught by Dennis et al. as base variable because it would allow for a better calibration as to the distance of the segments connecting the nodes of the network.

(3) with respect to claim 7:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein an identified base variable is the number of wavelengths in the segment.

However, Dennis et al. teaches the method, wherein an identified base variable is the number of wavelengths in the segment (page 8, table 2, number of channels, see also figure 5, graph of QdB based on the number of channels).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the number of channel calculations as taught by Dennis et al. because the network then would have improved quality.

(4) with respect to claim 8:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein an identified base variable is the length for each fiber span within the segment.

However, Dennis et al. teaches the method, wherein an identified base variable is the length for each fiber span within the segment (page 9, paragraph 0097).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the length for each fiber span within the segment as taught by Dennis et al. as a base variable because it would allow for a better calibration as to the distance of the segments connecting the nodes of the network.

(5) with respect to claim 19:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the approximated function is linear.

Dennis et al. teaches the method, wherein the approximated function is linear (page 1, paragraph 14).

Dennis et al. does not explicitly teach a linear function, but does reference an ideal linear transmission, which is basically referring to linear transmission function in the same field of endeavor. Therefore it would have been obvious to one of ordinary skill in the art to use the ideal linear transmission function as taught by Dennis et al. to represent the transmission of the signal of Chien since it would show the transmission without the effects that impacts its viability. It is vital in determining the damage of specific optical effect in the transmission.

(6) with respect to claim 22:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the performance is measured by Q.

However, Dennis et al. teaches the method, wherein the performance is measured by Q (see figures 5 and 6, the y-axis of the performance graph is in QdB, page 8, paragraph 0089).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to measure the performance of the signal in Q as taught by Dennis et al. since it is known to offer a better understanding of the signal's behavior.

4. Claims 9 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien (20020176482) and Ohira et al. (20020131101) as applied to claim 1 above, and further in view of Stuart (20020196507).

(1) with respect to claim 9:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein an identified optical effect is a distortion effect.

However, Stuart teaches the method, wherein an identified optical effect is a distortion effect (page 2, paragraph 0024, in fact Stuart teaches a way to isolate the effects of distortion).

The effects of distortion are usually unwanted in communication. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the distortion effect as taught by Stuart as an identified optical effect along the network of Chien because it would have provided a way of obtaining clearer signal.

(2) with respect to claim 10:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the effect is dispersion.

However, Stuart teaches the method, wherein the effect is dispersion (page 2, paragraph 24).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use dispersion as taught by Stuart as an identified optical effect since it is known that dispersion is a well known effect that affects a signal's viability.

(3) with respect to claim 11:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the effect is self-phase modulation.

However, Stuart teaches the method, wherein the effect is self-phase modulation (page 4, paragraph 0035).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use self-phase modulation as taught by Stuart as an identified optical effect because self-phase modulation is well known for a transmission impairment effect.

(4) with respect to claim 12:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the effect is cross-phase modulation.

However, Stuart teaches the method, wherein the effect is cross-phase modulation (page 4, paragraph 0035).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use cross-phase modulation as taught by Stuart as an identified

optical effect because cross-phase modulation is well known for a transmission impairment effect.

(5) with respect to claim 13:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the effect is four-wave mixing.

However, Stuart teaches the method, wherein the effect is four-wave mixing (page 4, paragraph 0035).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use four-wave mixing as taught by Stuart as an identified optical effect because it describes the interaction of channels at separate wavelengths. It would have provided a way of measuring increasing amount of noise in the transmission.

5. Claims 14 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien (20020176482) and Ohira et al. (20020131101) as applied to claim 1 above, and further in view of Desurvire et al. (4,738,503).

(1) with respect to claim 14:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein an identified optical effect is a noise effect.

However, Desurvire et al. teaches the method, wherein an identified optical effect is a noise effect (column 3, line 55).

Therefore it would have been obvious to one of ordinary skill in the art to use the noise effect as taught by Desurvire et al. as an identified optical effect since it is well known to cause noise that impacts the signal's viability.

(2) with respect to claim 15:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the effect is amplified spontaneous emission.

However, Desurvire et al. teaches the method, wherein the effect is amplified spontaneous emission (column 14, line 35).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use amplified spontaneous emission as taught by Desurvire et al. as an optical effect in the calculations of Chien since it is known to cause some impairment in the transmission of the signal.

(3) with respect to claim 16:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the effect is stimulated Brillouin scattering.

However, Desurvire et al. teaches the method, wherein the effect is stimulated Brillouin scattering (column 19, line 11).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use stimulated Brillouin scattering as taught by Desurvire et al. as an optical effect in the calculations of Chien since it is known to cause problems with the transmission of the signal.

(4) with respect to claim 17:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the effect is stimulated Raman scattering.

However, Desurvire et al. teaches the method, wherein the effect is stimulated Raman scattering (column 19, line 12).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use stimulated Raman scattering as taught by Desurvire et al. as an optical effect in the calculations of Chien since it is known to cause problems with the transmission of the signal.

(5) with respect to claim 18:

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the effect is multi-path interference.

However, Desurvire et al. teaches the method, wherein the effect is multi-path interference (column 3, line 49).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use multi-path interference as taught by Desurvire et al. in the calculations of Chien because it is a lot of times the cause of noise in the transmission of signal.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chien (20020176482) and Ohira et al. (20020131101) as applied to claim 1 above, and further in view of Terahara et al. (5,729,372).

Chien and Ohira et al. teach all of the subject matter as described above, except for the method, wherein the performance is measured by an accumulation of penalty points.

Terahara et al. teaches the method, wherein the performance is measured by an accumulation of penalty points (column 27, line 63, the reference teaches the calculation of Q point penalty).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to calculate the performance as taught by Terahara et al. because it would lead to results which would achieve reduction of cost and higher reliability.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guerssy Azemar whose telephone number is (571)270-1076. The examiner can normally be reached on Mon-Fri (every other Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on (571)272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Guerssy Azemar

08/15/2006

SHUWANG LIU
SUPERVISORY PATENT EXAMINER